DOCUMENT RESUME

ED 263 482 CG 018 639

AUTHOR Zellman, Gail L.
TITLE The Health Belief Model and Teenage Contraceptive Behavior: From Theory to Operation.
PUB DATE 20 Sep 85
NOTE 16p.; Paper presented at the Annual Convention of the American Psychological Association (92nd, Toronto, Ontario, Canada, August 24-28, 1984). For related documents, see ED 256 970 and CG 018 656.
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Adolescents; *Contraception; *Intervention; Pregnancy; *Prevention

ABSTRACT

This report addresses the problem of sexually active teenagers who either do not use contraception or use it inconsistently. Psychological and cognitive barriers to contraception use are briefly reviewed and the development of a cognitively oriented intervention designed to modify beliefs inimical to contraceptive use is discussed. The selection of the Health Belief Model (HBM), a value-expectancy approach to explaining and predicting preventive health behaviors, as a tool for the intervention is described and four strengths of the HBM are presented. A discussion of key HBM concepts is given along with a review of some of the contraceptive literature relevant to the HBM. The design of the adolescent contraceptive behavior intervention is described and a chart is included which illustrates the adaptation of the HBM to the intervention. A four-step process for learning responsible sexual behavior is presented and the use of lectures and small groups in the intervention is described. It is recommended that field tests be conducted using a control group and a larger experimental group in order to evaluate the effectiveness of this intervention. (NRB)

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THE HEALTH BELIEF MODEL AND TEENAGE CONTRACEPTIVE BEHAVIOR: FROM THEORY TO OPERATION

Gail L. Zellman, Ph.D.

The Rand Corporation

Paper presented at the 92nd Annual Convention of the American Psychological Association, Toronto, August, 1984.

September 20, 1984

CG 018639

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INTRODUCTION

While researchers and practitioners may debate the reasons behind low levels of use, they generally agree that teenagers are in great need of support for using contraceptives. While rates of consistent contraceptive usage are increasing, the growing incidence of teenage sexual activity has swelled the numbers of nonusers as well (e.g., Zelnik, Kantner and Ford, 1981).

Few teenagers want to become pregnant. Why then are so many teenagers nonusers or inconsistent users of contraceptives? Speculation ranges widely--from lack of knowledge or lack of access to more psychological explanations--for example, inability to accept themselves as sexual, lack of planfulness, inability to understand probability theory, and egocentric thinking (e.g., Cvetkovich et al., 1978). Zellman's (1981) study of pregnant and parenting teenagers concluded that psychological factors are key. One after another, the teenage mothers interviewed described a social environment in which sex was expected but contraception was not. Or worse, the cautiousness and planfulness associated with contraceptive use was viewed as negative and inconsistent with commitment and love.

Zellman's (1981) respondents all knew about contraception and nearly all knew how and where to get it. But the psychological barriers had proved insurmountable. Many of these barriers were cognitive--they didn't believe they would or could get pregnant for one reason or another; given their imagined invulnerability, they perceived no benefits and many costs in using contraception; and while not desired, a

number thought motherhood at an early age would not seriously affect their life plans.

Our findings and those of others led us to think that a cognitively oriented intervention designed to modify beliefs inimical to contraceptive use held considerable promise for improving rates of contraceptive usage among sexually active teenagers and for promoting contraception at first intercourse among those not sexually active. A cognitive approach seemed particularly appropriate for contraception because *consistent* use--our ultimate goal and the behavior required to avoid pregnancy over the long term--must ultimately depend on internal, cognitive motivation. While a fear appeal might motivate getting a flu shot or a chest xray, externally induced fear of pregnancy and its consequences cannot be assumed to last over time. Even a pregnancy itself, while persuasive in the short term as a motivator of contraceptive use, loses its persuasive power over time. Hence, to build in long-term motivation, it is necessary to influence perceptions of the expectancy and value of pregnancy (Leventhal, Safer and Panagis, 1983).

THE HEALTH BELIEF MODEL

Although it had only rarely been used to analyze fertility control or contraceptive behavior (e.g., D'Onofrio, 1973) the Health Belief Model, a value-expectancy approach to explaining and predicting preventive health behaviors, offered a powerful organizing tool for our intervention (Rosenstock, 1966; 1975; Katatsky, 1977). Four strengths stood out.

First, the Health Belief Model derives from a strong body of psychological theory on motivation, fear, and behavior. Certainly the Health Belief Model is compatible with other expectancy x value theories such as those of Feather and Atkinson (1966) and Fishbein (1967). Recent work in other areas, e.g., the effects of fear on behavior, has given credence to cognitive factors. For example, beliefs about one's ability to successfully carry out preventive activities have been identified as mediators between fear arousal and behavior (e.g, Leventhal, Safer and Panagis, 1983; Beck and Frankel, 1981; Leventhal, Watts, and Pagano, 1967).

Second, the Health Belief Model has been used effectively to understand and predict a number of preventive health behaviors including those who seek genetic screening for the Tay Sachs trait (Becker, Kaback, Rosenstock and Ruth, 1975) and those parents who maintain children on diet regimens (Becker, Maiman, Kirscht, Haefner, and Dachman, 1977).

In the latter study, the authors pointed out that dietary compliance differs somewhat from other health activities because (1) the threat of obesity is not immediate but future-oriented and related to other conditions; (2) appropriate action regarding diet may be taken for non-health reasons; and (3) obesity may not be perceived, strictly speaking, as a health problem. Similar observations may be made about pregnancy, lending credence to our extension of the Health Belief Model to an exploration of teenage contraceptive behavior.

The Health Belief Model has also been extended with some modifications to predict illness behavior, or compliance with prescribed regimens (Kasl and Cobb, 1966; Kirscht, 1974; Kasl, 1974, Sackett and Haynes, 1976). Because contraceptive action involves both a decision to undertake a preventive health behavior and then correct and consistent application of the method, be it a prescribed regimen or an over-the-counter commodity, we believe, unlike Fisher (1977), that the model is equally applicable to both preventive and compliance behavior.

Third, the Health Belief Model had been used successfully, albeit on a limited basis, as a guide to interventions designed to modify health beliefs (Becker, Maiman et al., 1977). The four components of the Health Belief Model--Seriousness, Susceptibility, Benefits, and Barriers--could be readily and discretely operationalized in designing a curriculum for teenagers.

Fourth, the components of the Health Belief Model discussed below mesh well with the cognitions that we know to represent problems for teenagers in acquiring and using contraception.

Finally, research in the area of contraceptive use, although not conducted in the context of the Health Belief Model, led us to believe that changes in the key concepts of the Health Belief Model would affect contraceptive behavior. In a paper published after our research was underway, Nathanson and Becker (1983) reviewed the contraceptive literature relevant to the Health Belief Model. A discussion of key Health Belief Model concepts and some of this literature follows.

Seriousness

In the Health Belief Model, seriousness represents a cognitive assessment of the severity of the consequences a person believes she would suffer if she were to contract a health-threatening condition. Teenagers tend to discount the seriousness of a teenage pregnancy, assuming abortion or marriage will resolve it or believing it will not interfere with poorly formed or nonexistant life goals. Consistent findings of a positive relationship between educational aspirations and contraceptive use (e.g., Ricketts, 1973) support the idea that pregnancy is problematic the more it is perceived to interfere with life goals.

Susceptibility

This is a cognitive assessment of how likely a person believes it is that she would contract a health-threatening condition if no preventive measures were taken. Teenagers underestimate their susceptibility to pregnancy or impregnation for many reasons--among them, inability to understand probability and unwillingness to accept themselves as sexual (Cvetkovich, Grote, Leiberman, and Miller, 1978).

A number of studies document that sexually active teenagers who are not using contraceptives tend to discount the likelihood of pregnancy (e.g., Shah, Zelnik and Kantner, 1975). In one study with a very small number of subjects, a pregnancy scare, later unconfirmed, failed to increase contraceptive use--having escaped pregnancy confirmed for many their invulnerability to it (Evans, Selstad, and Welcher, 1976).

Barriers

Barriers to preventive actions represent a cognitive assessment of the perceived costs of preventive behaviors. For teenagers, these costs are apparent at every point in the sequence of acquiring and using contraceptives. Teenagers worry about being seen at a clinic, about being discovered by parents if devices are left at home. In their social milieu, contraception may be viewed as a sign of lack of love; psychologically, being prepared may force a teenager to take responsibility for her sexuality--and this is hard.

Teenagers also worry about the side effects of the contraceptive most often recommended to them--the pill.[1] And this cost seems less reasonable to bear because sexual activity is often infrequent.

Benefits

In the Health Belief Model, benefits are often described in terms of the perceived efficacy of preventive actions. Contraception works, if used correctly. Teenagers generally acknowledge this, although, in fact, barrier methods vary considerably in use effectiveness (Bruce and Schearer, 1979).

We felt that the concept of benefits had to be expanded to include the benefits experienced in a protected relationship. For example, contraceptive use by a male conveys to his partner that he respects and care about her. It may also make sex more likely.

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[1] One director of an in-school clinic in Zellman's (1981) study noted that medical practitioners have done teenagers a disservice by presenting the pill as the only "effective" contraceptive. While its clinical efficacy is higher than that of other methods, it is not well suited to the often sporadic sexual behavior of teenagers and the discomfort many feel with "premeditated" sex. Many teenagers believe there is no worthwhile alternative to the pill and therefore may not use any contraceptive if the pill is unavailable or unacceptable for any reason.

Reiss, Banwort and Foreman (1975) report that college women who agreed that effective contraception can increase sexual enjoyment were more likely to attend a birth control clinic. Other research suggests that a woman's acceptance of responsibility for contraception (and, necessarily, for her sexuality) increases her power in a sexual relationship (Jorgenson, King, and Torrey, 1980).

DESIGNING THE INTERVENTION

As a guide for the substance of our intervention, we adapted the Health Belief Model to adolescent contraceptive behavior as shown in Figure 1. In so doing, we maintained the distinctiveness of the four Health Belief Model components so that they could be readily operationalized.

While the Health Belief Model clearly dictated the content of our intervention, it had nothing to say about *how* to do it. The cognitive limitations of our potential teenage subjects, particularly the inconsistencies in their level of thinking, helped fill this gap. The structure and process of our intervention had to accept the subjects as they were and help them gain skills and sufficient self-confidence to use them. We knew, for example, that lectures alone would not be effective (Kirby, 1984). Studies of sex education (e.g., Zelnik and Kantner, 1977) bear this out. Work by Reichelt and Werley (1976) suggested that active participation might be more effective. They found that level of sexual and reproductive knowledge was greatly improved after an informal rap session at a family planning clinic.

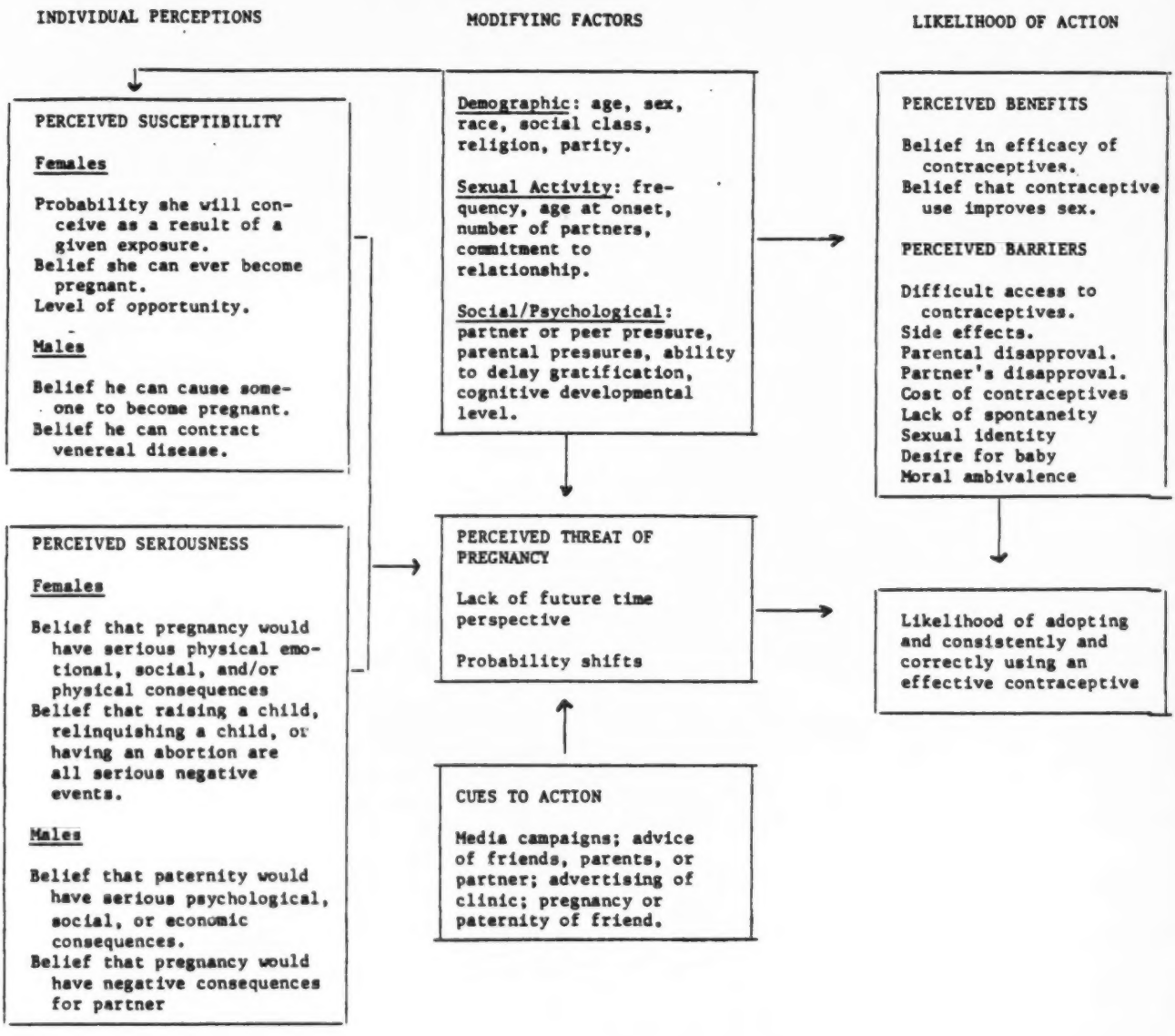
INDIVIDUAL PERCEPTIONS
MODIFYING FACTORS
LIKELIHOOD OF ACTION
PERCEIVED SUSCEPTIBILITY
Females
Probability she will conceive as a result of a given exposure.
Belief she can ever become pregnant.
Level of opportunity.
Males
Belief he can cause someone to become pregnant.
Belief he can contract venereal disease.
PERCEIVED SERIOUSNESS
Females
Belief that pregnancy would have serious physical emotional, social, and/or physical consequences
Belief that raising a child, relinquishing a child, or having an abortion are all serious negative events.
Males
Belief that paternity would have serious psychological, social, or economic consequences.
Belief that pregnancy would have negative consequences for partner
Demographic: age, sex, race, social class, religion, parity.
Sexual Activity: frequency, age at onset, number of partners, commitment to relationship.
Social/Psychological: partner or peer pressure, parental pressures, ability to delay gratification, cognitive developmental level.
PERCEIVED THREAT OF PREGNANCY
Lack of future time perspective
Probability shifts
CUES TO ACTION
Media campaigns; advice of friends, parents, or partner; advertising of clinic; pregnancy or paternity of friend.
PERCEIVED BENEFITS
Belief in efficacy of contraceptives.
Belief that contraceptive use improves sex.
PERCEIVED BARRIERS
Difficult access to contraceptives.
Side effects.
Parental disapproval.
Partner's disapproval.
Cost of contraceptives
Lack of spontaneity
Sexual identity
Desire for baby
Moral ambivalence
Likelihood of adopting and consistently and correctly using an effective contraceptive

Figure 1. Adaptation of the Health Belief Model to adolescent contractive behavior

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The work of Schinke and his colleagues at the University of Washington, in which prevention of adolescent pregnancy is conceptualized using a cognitive-behavioral approach, served as a guide for structuring our intervention (e.g., Schinke, Gilchrist, and Small, 1979; Schinke and Gilchrist, 1978). Schinke suggests that learning responsible sexual behavior is a four-step process:

1. Access to relevant information
2. Accurate comprehension and storage of this information.
3. Personalization of this information in the context of decisionmaking
4. Acquisition of behavioral and interpersonal skills necessary to implement decisions.

Schinke argues strongly that, in order for all four processes to occur, small group work is required. In these groups, leaders can provide information, monitor accurate information processing, help teenagers to see that the information has personal meaning for them and help develop the skills required to implement decisions through role playing, modeling and coaching.

Further, we hoped to alter perceptions of teenage norms concerning contraceptive use. Small groups held strong potential for changing participant's perceptions of what other teenagers thought.

In the interest of efficiency and expertise, our small group meetings were preceded by two two-hour lectures on reproductive biology. Once in small groups, leaders monitored the extent and accuracy of the information acquired during these lectures through several activities,

most notably a takeoff on the TV game, Family Feud. In the course of the game erroneous information was corrected and information that was missed was presented again.

Our small groups, averaging eight and led by two graduate student volunteers (usually one male and one female), met four times for two and a half hours each time over a period of three weeks. Groups were of mixed gender but age-homogeneous--we believed same-age peers would be closer cognitively and could be more easily identified with.

Group tasks were structured to conform to the Health Belief Model. Specific exercises were designed to increase perceived seriousness and perceived susceptibility to pregnancy, given unprotected intercourse. Barriers and benefits were presented as well. Activities were designed to make all of these constructs concrete and real to participants. Older group leaders facilitated group discussion and modeled appropriate behaviors for the group. Role play provided opportunities to practice new skills. Participants were paid a total of $20 for participating--$5 for completing the pretest; $5 for completing the intervention and the immediate post-test, and $10 for completing the followup survey three to six months later.

Our results are encouraging.[2] Our study has its limits--key among them the lack of a control group, paid participants, and the inevitable selectivity that occurs when active parental consent is required, as it was in our study. Nevertheless, we believe we have developed an approach that shows promise in promoting needed change in patterns of adolescent contraceptive use. A field test with a control

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[2] For discussion of our preliminary findings, see M. Eisen and G. L. Zellman "Health Belief Model-Based Changes in Sexual Knowledge, Attitudes and Behavior," paper presented at the Annual Meeting of the American Psychological Association, August 1984.

group and a larger experimental group seems warranted. Further, we are hopeful that our results will expand the applicability of the Health Belief Model to another key area of preventive health behavior.

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